

# Naval Medical Center Portsmouth (NMCP) COVID-19 Literature Report

## #97: Friday, 08 July 2022

**ANNOUNCEMENT:** The NMCP COVID-19 Literature Report has been produced since March 2020. These reports have taken significant time and effort to produce, often at the cost of other demands. After consultation, **these reports will stop with #100 on 19 August 2022.** I hope they have been of value. Archived reports will be available [online](#) and through the [Medical Heritage Library](#) and [BUMED's Office of Medical History collection](#) at archive.org.

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**Purpose:** These reports, published every other week on Fridays, are curated collections of current research, special reports, and news regarding the COVID-19 pandemic that may be of interest to medical providers, leadership, and decision makers. All reports are available online at <https://nmcp.libguides.com/covidreport>.

**Disclaimer:** I am not a medical professional. This document is current as of the date noted above. While I make every effort to find and summarize available data, I cannot cover everything in the literature on COVID-19. Due to the rapid evolution of the literature, I will not update past reports when new information arises; for retracted papers specific to COVID-19, see the [list of retracted papers from Retraction Watch](#).

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## The Big Picture

### *News in Brief*

Commentary: "The next epidemic may be here. The U.S. isn't ready for it" ([STAT](#)).

## *Journal Articles*

JAMA Netw Open: [Estimated Number of COVID-19 Infections, Hospitalizations, and Deaths Prevented Among Vaccinated Persons in the US, December 2020 to September 2021](#) (06 July 2022)

"Question: How many SARS-CoV-2 infections and COVID-19–associated hospitalizations and deaths have been prevented among vaccinated persons by the US COVID-19 vaccination program?

Findings: In this modeling study, COVID-19 vaccination was estimated to prevent 27 million SARS-CoV-2 infections, 1.6 million COVID-19–associated hospitalizations, and 235 000 COVID-19–associated deaths among vaccinated persons 18 years or older from December 1, 2020, to September 30, 2021. By September 30, 2021, vaccination prevented an estimated 52% of expected infections, 56% of expected hospitalizations, and 58% of expected deaths.

Meaning: The US COVID-19 vaccination program was estimated to prevent substantial morbidity and mortality through direct protection of vaccinated individuals."

JAMA Intern Med: [Leading Causes of Death in the US During the COVID-19 Pandemic, March 2020 to October 2021](#) (05 July 2022)

"From March 2020 to October 2021, COVID-19 accounted for 1 in 8 deaths in the US and was a top 5 cause of death in every age group aged 15 years and older. Cancer and heart disease deaths exceeded COVID-19 deaths overall and in most age groups, whereas accidents were the leading cause of death among those aged 1 to 44 years. Compared with the 2020 time period, deaths from COVID-19 in the 2021 time period decreased in ranking among those aged 85 years or older but increased in ranking among those aged 15 to 54 years, and became the leading cause of death among those aged 45 to 54 years."

## *Military*

Mil Med: [Caring for Service Members Who Have Been Sexually Assaulted: The Military Health System](#) (25 June 2022)

"Introduction: Reports of sexual assault (SA) in the U.S. Military have increased in recent years. Given the deleterious effects of military SA, there remains a need for large-scale

studies to assess SA-related health care utilization among active duty service members (ADSMs). The present study, therefore, utilized Military Health System (MHS) data to determine the prevalence of SA-related care, sociodemographic characteristics of ADSMs receiving said care, and the type of provider seen during the initial SA-related health encounter.

**Materials and methods:** Utilizing the MHS Data Repository and Defense Enrollment Eligibility Reporting System, all ADSMs from the Air Force, Army, Navy, and Marine Corps during fiscal years (FY) 2016-2018 were identified. Those with an International Classification of Diseases diagnostic code related to SA during the study period were isolated. Descriptive statistics and multivariable logistic regression analyses were conducted. The study was exempt from human subjects review.

**Results:** A total of 1,728,433 ADSMs during FY 2016-2018 were identified, of whom 4,113 (0.24%) had an SA-related health encounter. Rates of SA-related health care encounters decreased each FY. Women (odds ratio [OR] = 12.02,  $P < .0001$ ), those in the Army (reference group), and enlisted personnel (OR = 2.65,  $P < .0001$ ) were most likely to receive SA-related health care, whereas ADSMs aged 18-25 years had lower odds (OR = 0.70,  $P < .0001$ ). In addition, higher odds of SA-related care were observed among those identifying as American Indian/Alaskan Native (OR = 1.37,  $P = .02$ ) and "Other" race (e.g., multiracial) (OR = 4.60,  $P < .0001$ ). Initial SA-related health encounters were most likely to occur with behavioral health providers (41.4%).

**Conclusions:** The current study is the first large-scale examination of health care usage by ADSMs in the MHS who have experienced SA. Results indicated that rates of SA-related care decreased throughout the study period, despite the increasing rates of SA documented by the DoD. Inconsistent with previous research and DoD reports indicating that younger ADSMs are at the highest risk for SA, our study observed lower rates of SA-related care among those aged 18-25 years; additional research is warranted to determine if there are barriers preventing younger ADSMs from seeking SA-related health care. Behavioral health providers were most frequently seen for the initial SA-related encounter, suggesting that they may be in a unique position to provide care and/or relevant referrals to ADSMs who have experienced SA. The present study provides key insights about the prevalence of SA-related care within the MHS, not yet reported in previous literature, which could help inform MHS screening practices. The strengths of the study are the inclusion of the entire active duty population without the need for research recruitment given the utilization of de-identified TRICARE claims data. The study is limited by its use of health care claims data, general SA International Classification of Diseases codes as a proxy indicator for military SA, and lack of data on ethnicity. Future research utilizing MHS data should examine mental health outcomes following the documentation of SA and disruptions in SA-related care due to SARS-CoV-2."

AMA J Ethics: [How Should Access to Military Health Care Facilities Be Controlled in Conflict?](#) (01 June 2022)

"This commentary on a case analysis examines the principles that govern decisions about which patients might be admitted to an international military hospital during humanitarian or combat operations. It explores the balance between duties under the Geneva Conventions and other international humanitarian laws, the requirement to be able to provide medical support to the military mission, and the obligation of clinicians to coordinate with other health care practitioners (local civilian, local military, and nongovernment organizations). Finally, this commentary considers the practical aspects of implementing these arrangements."

## COVID-19 Vaccines

### *News in Brief*

"FDA recommends inclusion of omicron BA.4/5 component for COVID-19 vaccine booster doses" ([FDA](#)).

"Omicron-based coronavirus booster shots will roll out this fall" ([WP](#)).

"Fast-evolving COVID variants complicate vaccine updates" ([Nature](#)).

"BioNTech, Pfizer to start testing universal vaccine for coronaviruses" ([Reuters](#)).

"Did COVID vaccine mandates work? What the data say" ([Nature](#)).

### *Journal Articles*

Mil Med: [Addressing Persistent Vaccine Hesitancy in a Military Community Through a Physician-Led Intervention](#) (28 June 2022)

"Introduction: Following the identification of coronavirus disease 2019 (COVID-19) in China, the virus has spread rapidly around the world causing severe illness and death. Several vaccines were found to be safe and effective and made available first to those most at risk and then to the general public. Despite the safety and efficacy profiles, vaccine hesitancy remains a significant barrier to widespread immunity. Within the military community at Wright-Patterson Air Force Base, we provided multiple physician-led educational seminars to address vaccination concerns and decrease vaccine hesitancy."

**Materials and methods:** The authors presented a PowerPoint presentation of the available vaccinations, their safety data, and efficacy, followed by a town hall-style question-and-answer period where questions were presented from the previous submission, as well as real-time submissions through Facebook Live. The questions were fielded by specialists in Internal Medicine, Infectious Disease, Pulmonary-Critical Care, Obstetrics and Gynecology, and Rheumatology. The entire presentation was streamed through Facebook Live and was freely available. Following the presentation, an online survey was provided for willing participants to complete which included demographic data and addressed their previous and current attitudes toward COVID-19 vaccinations and their opinions on the presentation. Data from the survey were then analyzed through IBM SPSS Statistics 25.0 to find any associations or risk factors for hesitancy.

**Results:** There were 73 respondents to the assessment, most of which were nonmedical. Of the 73, the majority (45) had already received a vaccine for COVID-19. Of those unvaccinated, 17 did not want a vaccination before or after the seminar. Two did change their mind about being receptive to vaccination, and one changed from receptive to hesitant. The only statistically significant risk factors for vaccine hesitancy were those with a moderate to great amount of trust in their health care provider compared to those with little to no trust (73% vs. 4%,  $P < .001$ ).

**Conclusions:** Our intervention was limited in its effectiveness to address vaccine hesitancy late in the pandemic, with our study limited by our small sample size. Regardless, it identified a peculiar discrepancy with those with the most trust in health care providers being the most likely to be vaccine-hesitant. This highlights the importance of the information that trusted health care providers are providing to their patients and may identify more effective routes to address vaccine hesitancy in the future."

## **Transmission, Exposure, and Surveillance**

### ***News in Brief***

"First reported case of a person getting COVID from a cat" ([Nature](#); see also: [Emerging Infectious Diseases article](#)).

"UT Southwestern researchers create rapid COVID-19 test to detect variants" ([BHR](#)).

"Still testing positive after day 10? How to decide when to end your COVID isolation" ([NPR](#)).

"COVID variants found in sewage weeks before showing up in tests" ([Nature](#); see also: [Nature article](#)).



Image source: NPR. Melody Schreiber. Coronavirus FAQ: Can I get COVID outdoors? (01 July 2022). Link: <https://www.npr.org/sections/goatsandsoda/2022/07/01/1109444481/coronavirus-faq-can-i-get-covid-outdoors-with-printable-poster-on-how-to-cut-ris>

## **Journal Articles**

Clin Infect Dis: [Magnitude and determinants of SARS-CoV-2 household transmission: a longitudinal cohort study](#) (05 July 2022)

"Background: Households have emerged as important venues for SARS-CoV-2 transmission. Little is known, however, regarding the magnitude and determinants of household transmission in increasingly vaccinated populations.

Methods: From September 2020 to January 2022, symptomatic non-hospitalized individuals with SARS-CoV-2 infection by RNA detection were identified within 5 days of symptom onset; all individuals resided with at least one other SARS-CoV-2-uninfected household member. These infected persons (cases) and their household members (contacts) were subsequently followed with questionnaire-based measurement and serial nasal specimen collection. The primary outcome was SARS-CoV-2 infection among contacts.

Results: We evaluated 42 cases and their 74 household contacts. Among the contacts, 32 (43%) became infected, of whom 5/32 (16%) were asymptomatic; 81% of transmissions occurred by 5 days after the case's symptom onset. From 21 unvaccinated cases, 14-day cumulative incidence of SARS-CoV-2 infection among contacts was 18/40 (45%; 95% CI: 29, 62), most of whom were unvaccinated. From 21 vaccinated cases, 14-day cumulative incidence of SARS-CoV-2 infection was 14/34 (41%; 95% CI: 25, 59) among all contacts and 12/29 (41%; 95% CI: 24, 61) among vaccinated contacts. At least one co-morbid condition among cases and 10 or more days of RNA detection in cases were associated with increased risk of infection among contacts.

Conclusions: Among households including individuals with symptomatic SARS-CoV-2 infection, both vaccinated-to-vaccinated and unvaccinated-to-unvaccinated transmission of SARS-CoV-2 to household contacts was common. Because vaccination alone did not notably reduce risk of infection, household contacts will need to employ additional interventions to avoid infection."

BMJ: [Long distance airborne transmission of SARS-CoV-2: rapid systematic review](#) (29 June 2022)

"Objectives: To evaluate the potential for long distance airborne transmission of SARS-CoV-2 in indoor community settings and to investigate factors that might influence transmission.

Design: Rapid systematic review and narrative synthesis.

Data sources: Medline, Embase, medRxiv, Arxiv, and WHO COVID-19 Research Database for studies published from 27 July 2020 to 19 January 2022; existing relevant rapid systematic review for studies published from 1 January 2020 to 27 July 2020; and citation analysis in Web of Science and Cocites.

Eligibility criteria for study selection: Observational studies reporting on transmission events in indoor community (non-healthcare) settings in which long distance airborne transmission of SARS-CoV-2 was the most likely route. Studies such as those of household transmission where the main transmission route was likely to be close contact or fomite transmission were excluded.

Data extraction and synthesis: Data extraction was done by one reviewer and independently checked by a second reviewer. Primary outcomes were SARS-CoV-2 infections through long distance airborne transmission (>2 m) and any modifying factors. Methodological quality of included studies was rated using the quality criteria checklist, and certainty of primary outcomes was determined using the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) framework. Narrative synthesis was themed by setting.

Results: 22 reports relating to 18 studies were identified (methodological quality was high in three, medium in five, and low in 10); all the studies were outbreak investigations. Long distance airborne transmission was likely to have occurred for some or all transmission events in 16 studies and was unclear in two studies (GRADE: very low certainty). In the 16 studies, one or more factors plausibly increased the likelihood of long distance airborne transmission, particularly insufficient air replacement (very low certainty), directional air flow (very low certainty), and activities associated with increased emission of aerosols, such as singing or speaking loudly (very low certainty). In 13 studies, the primary cases were reported as being asymptomatic, presymptomatic, or around symptom onset at the time of transmission. Although some of the included studies were well conducted outbreak investigations, they remain at risk of bias owing to study design and do not always provide the level of detail needed to fully assess transmission routes.

Conclusion: This rapid systematic review found evidence suggesting that long distance airborne transmission of SARS-CoV-2 might occur in indoor settings such as restaurants, workplaces, and venues for choirs, and identified factors such as insufficient air replacement that probably contributed to transmission. These results strengthen the need for mitigation measures in indoor settings, particularly the use of adequate ventilation."

Emerg Infect Dis: [Early SARS-CoV-2 reinfections within 60 days and implications for retesting policies](#) (23 June 2022)

"Illustrated by a clinical case supplemented by epidemiologic data, early reinfections with SARS-CoV-2 Omicron BA.1 after infection with Delta variant, and reinfection with Omicron BA.2 after Omicron BA.1 infection, can occur within 60 days, especially in young, unvaccinated persons. The case definition of reinfection, which influences retesting policies, should be reconsidered."

Int J Environ Res Public Health: [Transmission in the Military during the Early Phase of the Pandemic-A Systematic Analysis](#) (16 June 2022)

"Militaries worldwide have been affected by COVID-19 pandemic. However, the impact and epidemiological characteristics of transmission during the early phase of the pandemic is not well-studied. This study aims to systematically estimate the baseline incidence of COVID-19 in the military worldwide and identify the potential risk factors of transmission and clinical characteristics of the cases. English and Chinese literature reporting COVID-19 cases in military worldwide published on four electronic databases (PubMed, Scopus, EMBASE, and CKNI) through 28 May 2021 were systematically screened and synthesized qualitatively. Forty-six studies involving at least 711,408 military personnel in 17 countries were synthesized. Low incidence of cases was observed in the military with pooled COVID-19 incidence of 0.19% (95%CI: 0.00-9.18%). We observed a higher incidence among those (1) with overseas exposure (39.85%; 95%CI: 0.00-95.87%) rather than local exposure (3.03%; 95%CI: 0.00-12.53%), (2) who were on either local/overseas military deployment (26.78%; 95%CI: 0.00-71.51%) as compared to those not deployed (4.37%; 95%CI: 0.00-17.93%), and (3) on overseas military deployment (39.84%; 95%CI: 0.00-95.87%) as compared to local military deployment (3.03%; 95%CI: 2.37-3.74%). The majority of the cases were symptomatic (77.90% (95%CI: 43.91-100.00%)); hospitalization and mortality rates were low at 4.43% (95%CI: 0.00-25.34%) and 0.25% (95%CI: 0.00-0.85%), respectively; and headache, anosmia, ageusia, myalgia, nasal congestion, and cough were the most commonly observed symptoms. Overseas and local deployment were observed to have higher risk of SARS-CoV-2 transmission. Sustainable, active SARS-CoV-2 surveillance strategies are crucial to detect and contain transmission early during military deployments."

## **Treatments and Management**

### ***News in Brief***

"COVID antibody drugs have saved lives — so why aren't they more popular?" ([Nature](#)).

"Doctors are clamoring for more clarity on Paxlovid prescribing amid Covid-19 rebound concerns" ([STAT](#)).

### ***Journal Articles***

JAMA Otolaryngol Head Neck Surg: [Efficacy and Safety of Saline Nasal Irrigation Plus Theophylline for Treatment of COVID-19-Related Olfactory Dysfunction: The SCENT2 Phase 2 Randomized Clinical Trial](#) (07 July 2022)

"Question: Is the use of theophylline added to saline nasal irrigation efficacious and safe for treatment of COVID-19-related olfactory dysfunction?

Findings: In this phase 2 randomized clinical trial of 51 adults with chronic COVID-19-related olfactory dysfunction, the number of participants who self-reported improvement in their olfactory function after using theophylline nasal irrigation was 16% higher than those receiving placebo (59% vs 43%). The theophylline arm had 24% more participants with a clinically meaningful change in their objective smell identification test score.

Meaning: The use of theophylline added to saline nasal irrigations may result in clinically beneficial improvements in smell function compared with saline irrigation alone."

NEJM Evid: [Oral Sabizabulin for High-Risk, Hospitalized Adults with Covid-19: Interim Analysis](#)  
(06 July 2022)

"BACKGROUND: Sabizabulin is an oral, novel microtubule disruptor that has dual antiviral and anti-inflammatory activities in preclinical models.

METHODS: A randomized, multicenter placebo-controlled phase 3 clinical trial was conducted with hospitalized patients with moderate to severe Covid-19 who were at high risk for acute respiratory distress syndrome (ARDS) and death. Patients were randomly assigned (2:1) to 9 mg of oral sabizabulin or placebo daily (up to 21 days). The primary end point was all-cause mortality up to day 60. Key secondary end points were days in the intensive care unit (ICU), days on mechanical ventilation, and days in the hospital.

RESULTS: A total of 204 patients were randomly assigned to treatment: 134 to sabizabulin and 70 to placebo. Baseline characteristics were similar. Sabizabulin superiority was demonstrated by a planned interim analysis for the first 150 randomized patients. Sabizabulin treatment resulted in a 24.9 percentage point absolute reduction and a 55.2% relative reduction in deaths compared with placebo (odds ratio, 3.23; 95% CI confidence interval, 1.45 to 7.22;  $P=0.0042$ ). The mortality rate was 20.2% (19 of 94) for sabizabulin versus 45.1% (23 of 51) for placebo. For the key secondary end points, sabizabulin treatment resulted in a 43% relative reduction in ICU days ( $P=0.0013$ ), a 49% relative reduction in days on mechanical ventilation ( $P=0.0013$ ), and a 26% relative reduction in days in the hospital ( $P=0.0277$ ) versus placebo. Adverse and serious adverse events were lower in the sabizabulin group compared with the placebo group.

CONCLUSIONS: Sabizabulin treatment resulted in a 24.9% absolute reduction in deaths compared with placebo in hospitalized patients with moderate to severe Covid-19 at high risk for ARDS and death, with a lower incidence of adverse and serious adverse events compared with placebo."

JAMA Intern Med: [High-Dose Dexamethasone and Oxygen Support Strategies in Intensive Care Unit Patients With Severe COVID-19 Acute Hypoxemic Respiratory Failure: The COVIDICUS Randomized Clinical Trial](#) (05 July 2022)

"Question: What are the effects of high-dose vs low-dose dexamethasone on 60-day time to all-cause mortality, and oxygenation strategies vs standard oxygen support on 28-day time to fulfilling invasive mechanical ventilation (IMV) criteria in patients with COVID-19 and severe acute hypoxemic respiratory failure (AHRF)?

Findings: In this randomized clinical trial among 546 patients with COVID-19 and severe AHRF, no difference was observed in 60-day mortality according to dexamethasone dose or in 28-day cumulative need for IMV according to oxygenation strategy.

Meaning: These findings suggest that in patients with COVID-19 and AHRF, high-dose dexamethasone or different oxygenation strategies did not significantly modify 60-day mortality or 28-day requirement for IMV criteria."

Radiology: [The Relationship of Imaging-guided Corticosteroid Injections to COVID-19 Incidence in the Pandemic Recovery Period](#) (05 July 2022)

"Background: Corticosteroids injected for the treatment of musculoskeletal pain are systemically absorbed and can affect the immune response to viral infections.

Purpose: To determine the incidence of symptomatic COVID-19 disease in individuals receiving image-guided corticosteroid injections for musculoskeletal pain compared with the general population during the pandemic recovery period.

Materials and methods: In this prospective cohort multicenter study, adults with a history of musculoskeletal pain who underwent imaging-guided intra-articular and spine corticosteroid injections between April 2020 and February 2021 were consecutively enrolled. Participants were followed for a minimum of 28 days through their electronic medical record (EMR) or by direct phone call to screen for COVID-19 test results or symptoms. Clinical data including body mass index (BMI) was also obtained from the EMR. Incidence of COVID-19 in the state was obtained using the Massachusetts COVID-19 Response Reporting website. Student t tests were used for continuous variable comparisons. Univariable analyses were performed using Fisher exact tests.

Results: A total of 2714 corticosteroid injections were performed for 2190 adult participants (mean age  $\pm$  standard deviation,  $59 \pm 15$  years, 1031 women). Follow-up was available for 1960 (89%) participants who received 2484 injections. Follow-up occurred  $97 \pm 33$  days (range 28 - 141 days) after the injection. There were 10/1960 participants with COVID-19 within 28 days from the injection (0.5%, 95% CI, 0.24-0.94%) and 43/1960 participants with COVID-19 up to 4 months after the injection (2.2% 95%CI, 1.6-2.9%). This was lower than the incidence rate in the population of Massachusetts during the same period

(519,195/6,892,503, 7.5%,  $P < .001$  both at 28 days and 4 months). Participants diagnosed with COVID-19 ( $n=10$ ) at 28 days had higher BMI than the entire cohort ( $n=1960$ ) ( $32 \pm 10$  vs.  $28 \pm 6$  kg/m<sup>2</sup>,  $P=.04$ ).

Conclusion: Adults who received image-guided corticosteroid injections for pain management performed during the pandemic recovery period had a lower incidence of symptomatic COVID- 19 compared with the general population."

Clin Infect Dis: [Antibiotic Resistant Infections among COVID-19 Inpatients in U.S. Hospitals](#) (02 July 2022)

"We described bacterial/fungal co-infections and antibiotic resistant infections among inpatients diagnosed with COVID-19 and compared findings with inpatients diagnosed with influenza-like-illness. Less than 10% of COVID-19 inpatients had bacterial/fungal co-infection. Longer lengths of stay, critical care stay, and mechanical ventilation contribute to increased incidence of hospital-onset infections among COVID-19 inpatients."

Clin Infect Dis: [Early treatment of high-risk hospitalized COVID-19 patients with a combination of interferon beta-1b and remdesivir: a phase 2 open-label randomized controlled trial](#) (28 June 2022)

"Background: Early antiviral therapy was effective in the treatment of COVID-19. We assessed the efficacy and safety of combined interferon beta-1b and remdesivir treatment in hospitalized COVID-19 patients.

Methods: We conducted a multicentre, prospective open-label, randomized-controlled trial involving high-risk adults hospitalized for COVID-19. Patients were randomly assigned to a 5-day interferon beta-1b 16 million units daily and remdesivir 200mg loading on day 1 followed by 100mg daily on day 2 to 5 (combination-group), or to remdesivir only of similar regimen (control-group) (1:1). The primary end-point was the time to complete alleviation of symptoms (NEWS2 = 0).

Results: Two-hundred and twelve patients were enrolled. The median days of starting treatment from symptom-onset was 3 days. The median age was 65 years and 159 patients (75%) had chronic disease. The baseline demographics were similar. There was no mortality. For the primary-endpoint, the combination-group was significantly quicker to NEWS2 = 0 (4 versus 6.5 days; hazard-ratio [HR], 6.59; 95% confidence-interval [CI], 6.1-7.09;  $p < 0.0001$ ) when compared to the control-group. For the secondary endpoints, the combination-group was quicker to negative NPS VL (6 versus 8 days; HR, 8.16; 95% CI, 7.79-8.52;  $p < 0.0001$ ) and develop seropositive IgG (8 versus 10 days; HR, 10.78; 95% CI, 9.98-11.58;  $p < 0.0001$ ). All adverse events resolved upon follow-up. Combination group (HR, 4.1 95%CI, 1.9-8.6,  $p < 0.0001$ ), was the most significant independent factor associated with NEWS2 = 0 on day 4.

Conclusions: Early treatment with interferon beta-1b and remdesivir was safe and better than remdesivir only in alleviating symptoms, shorten viral shedding and hospitalization with earlier seropositivity in high-risk COVID-19 patients."

### *Comorbidities*

MMWR: [Factors Associated with Severe Outcomes Among Immunocompromised Adults Hospitalized for COVID-19 — COVID-NET, 10 States, March 2020–February 2022](#) (08 July 2022)

"What is already known about this topic? Immunocompromise is associated with increased risk for intensive care unit (ICU) admission and in-hospital death after SARS-CoV-2 infection. Population-based descriptions of immunocompromised hospitalized patients and their outcomes are limited.

What is added by this report? Immunocompromised patients accounted for 12.2% of all adult COVID-19 hospitalizations among 10 states and had increased odds of ICU admission and in-hospital death compared with nonimmunocompromised patients, irrespective of vaccination status.

What are the implications for public health practice? Known multilayered prevention measures, including nonpharmaceutical interventions, up-to-date COVID-19 vaccination, and therapeutics, can prevent hospitalization and subsequent severe COVID-19 outcomes among immunocompromised persons."

Clin Infect Dis: [Persistent SARS-CoV-2 infection with accumulation of mutations in a patient with poorly controlled HIV infection](#) (06 July 2022)

"A 22-year-old female with uncontrolled advanced HIV infection was persistently infected with SARS-CoV-2 beta variant for 9 months, the virus accumulating >20 additional mutations. Antiretroviral therapy suppressed HIV and cleared SARS-CoV-2 within 6-9 weeks. Increased vigilance is warranted to benefit affected individuals and prevent the emergence of novel SARS-CoV-2 variants."

J Infect Dis: [Risk of severe COVID-19 disease in individuals with Down syndrome: a matched cohort study from a large, integrated health care system](#) (24 June 2022)

"Background: Down syndrome (DS) is associated with an increased risk of infections attributed to immune defects. Whether individuals with DS are at an increased risk of severe COVID-19 remains unclear.

Methods: In a matched cohort study, we evaluated the risk of COVID-19 infection and severe COVID-19 disease in individuals with DS and their matched counterparts in a pre-COVID-19 vaccination period at Kaiser Permanente Southern California. Multivariable Cox

proportion hazard regression was used to investigate associations between DS and risk of COVID-19 infection and severe COVID-19 disease.

Results: Our cohort included 2,541 individuals with DS and 10,164 without DS matched on age, sex, and race/ethnicity (51.6% female, 53.3% Hispanic, median age 25 years [interquartile range 14-38]). While the rate of COVID-19 infection in individuals with DS was 32% lower than their matched counterparts (adjusted hazard ratio [aHR] 0.68, 95% CI: 0.56-0.83), the rate of severe COVID-19 disease was 6-fold higher (aHR 6.14, 95% CI: 1.87-20.16).

Discussion: Although the risk of COVID-19 infection is lower, the risk of severe disease is higher in individuals with DS compared to their matched counterparts. Better infection monitoring, early treatment, and promotion of vaccine for COVID-19 are warranted for DS populations."

J Infect Dis: [Decreased antibody response after SARS-CoV-2 vaccination in patients with Down Syndrome](#) (24 June 2022)

"The risk of a severe course of SARS-CoV-2 infection in adults with Down syndrome is increased, resulting in an up to 10-fold increase in mortality, in particular in those over 40 years of age. After primary SARS-CoV-2 vaccination the higher risks remain. In this prospective observational cohort study, SARS-CoV-2 spike S1-specific antibody responses after routine SARS-CoV-2 vaccination (BNT162b2, mRNA-1273 or ChAdOx1) in adults with Down syndrome and healthy controls were compared. Adults with Down syndrome showed lower antibody concentrations after two mRNA vaccinations or after two ChAdOx1 vaccinations. After two mRNA vaccinations lower antibody concentrations were seen with increasing age."

## Long COVID and Other Post-Infectious Findings

### ***News in Brief***

"Estimates of long Covid are startlingly high. Here's how to understand them" ([STAT](#)).

"Long covid symptoms are often overlooked in seniors" ([WP](#)).

"Can our mitochondria help to beat long Covid?" ([Guardian](#))

"You could have long COVID and not even know it" ([Time](#)).

"WHO official says the more times a person gets COVID-19, the more likely they are to be 'unlucky' and get long COVID" ([BI](#)).

"The secrets of Covid 'brain fog' are starting to lift — Scientists are getting closer to understanding the neurology behind the memory problems and cognitive fuzziness that an infection can trigger" ([Wired](#)).

### ***Journal Articles***

JAMA: [Association Between BNT162b2 Vaccination and Long COVID After Infections Not Requiring Hospitalization in Health Care Workers](#) (01 July 2022)

"In this longitudinal observational study conducted among health care workers with SARS-CoV-2 infections not requiring hospitalization, 2 or 3 doses of vaccine, compared with no vaccination, were associated with lower long COVID prevalence."

JAMA Psychiatry: [Bridging Knowledge Gaps in the Diagnosis and Management of Neuropsychiatric Sequelae of COVID-19](#) (29 June 2022)

"Importance: Neuropsychiatric symptoms have been reported as a prominent feature of postacute sequelae of COVID-19 (PASC), with common symptoms that include cognitive impairment, sleep difficulties, depression, posttraumatic stress, and substance use disorders. A primary challenge of parsing PASC epidemiology and pathophysiology is the lack of a standard definition of the syndrome, and little is known regarding mechanisms of neuropsychiatric PASC.

Observations: Rates of symptom prevalence vary, but at least 1 PASC neuropsychiatric symptom has been reported in as many as 90% of patients 6 months after COVID-19 hospitalization and in approximately 25% of nonhospitalized adults with COVID-19.

Mechanisms of neuropsychiatric sequelae of COVID-19 are still being elucidated. They may include static brain injury accrued during acute COVID-19, neurodegeneration triggered by secondary effects of acute COVID-19, autoimmune mechanisms with chronic inflammation, viral persistence in tissue reservoirs, or reactivation of other latent viruses. Despite rapidly emerging data, many gaps in knowledge persist related to the variable definitions of PASC, lack of standardized phenotyping or biomarkers, variability in virus genotypes, ascertainment biases, and limited accounting for social determinants of health and pandemic-related stressors.

Conclusions and relevance: Growing data support a high prevalence of PASC neuropsychiatric symptoms, but the current literature is heterogeneous with variable assessments of critical epidemiological factors. By enrolling large patient samples and conducting state-of-the-art assessments, the Researching COVID to Enhance Recovery (RECOVER), a multicenter research initiative funded by the National Institutes of Health, will help clarify PASC epidemiology, pathophysiology, and mechanisms of injury, as well as identify targets for therapeutic intervention."

Nat Commun: [Long COVID burden and risk factors in 10 UK longitudinal studies and electronic health records](#) (28 June 2022)

"The frequency of, and risk factors for, long COVID are unclear among community-based individuals with a history of COVID-19. To elucidate the burden and possible causes of long COVID in the community, we coordinated analyses of survey data from 6907 individuals with self-reported COVID-19 from 10 UK longitudinal study (LS) samples and 1.1 million individuals with COVID-19 diagnostic codes in electronic healthcare records (EHR) collected by spring 2021. Proportions of presumed COVID-19 cases in LS reporting any symptoms for 12+ weeks ranged from 7.8% and 17% (with 1.2 to 4.8% reporting debilitating symptoms). Increasing age, female sex, white ethnicity, poor pre-pandemic general and mental health, overweight/obesity, and asthma were associated with prolonged symptoms in both LS and EHR data, but findings for other factors, such as cardio-metabolic parameters, were inconclusive."

Radiology: [Persistent <sup>129</sup>Xe MRI Pulmonary and CT Vascular Abnormalities in Symptomatic Individuals with Post-Acute COVID-19 Syndrome](#) (28 June 2022)

"Background: In patients with post-acute COVID-19-syndrome (PACS), abnormal gas-transfer and pulmonary vascular density have been reported, but such findings have not been related to each other, or to symptoms and exercise limitation. The pathophysiological drivers of PACS in ever- and never-hospitalized patients are not well-understood.

Purpose: To determine the relationship of persistent symptoms and exercise limitation with <sup>129</sup>Xe MRI and CT pulmonary vascular measurements in individuals with PACS.

Materials and Methods: In this prospective study, patients with PACS aged 18-80 years with a positive PCR COVID test were recruited from a quaternary-care COVID-19 clinic between April and October 2021. Participants with PACS underwent spirometry, diffusing-capacity-of-the-lung- for-carbon-monoxide (DLco), <sup>129</sup>Xe MRI, and chest CT. Healthy controls had no prior history of COVID-19 underwent spirometry, DLco, and <sup>129</sup>Xe MRI. The <sup>129</sup>Xe MRI red-blood-cell (RBC) to alveolar-barrier signal ratio, RBC area-under-the-curve (AUC), CT volume-of-pulmonary-vessels with cross-sectional-area <5mm<sup>2</sup> (BV5), and total-blood-volume (TBV) were quantified. St. George's Respiratory Questionnaire (SGRQ), International Physical Activity Questionnaire (IPAQ) and modified Borg Dyspnea Scale (mBDS) measured quality-of-life, exercise limitation and dyspnea. Differences between groups were compared using Welch's T-tests or Welch's ANOVA. Relationships were evaluated using Pearson (r) and Spearman (p) correlations.

Results: Forty participants were evaluated including six controls (mean age, 35±15 years[standard deviation], 3 women) and 34 participants with PACS (mean age, 53±13 years[SD], 18 women), of which 22 were never-hospitalized. The <sup>129</sup>Xe MRI RBC:barrier ratio was lower in ever- hospitalized participants (P=.04) compared to controls. BV5

correlated with RBC AUC ( $\rho=.44, P=.03$ ). The  $^{129}\text{Xe}$  MRI RBC:barrier ratio was related to DLco ( $r=.57, P=.002$ ) and FEV1 ( $\rho=.35, P=.03$ ); RBC AUC was related to dyspnea ( $\rho=-.35, P=.04$ ) and IPAQ score ( $\rho=.45, P=.02$ ).

Conclusion:  $^{129}\text{Xe}$  MRI measurements were lower in ever-hospitalized participants with post-acute COVID-19-syndrome,  $34\pm25$  weeks post-infection compared to controls.  $^{129}\text{Xe}$  MRI measures were associated with CT pulmonary vascular density, DLco, exercise capacity, and dyspnea."

## Pregnancy and Postpartum Period

### *Journal Articles*

Clin Infect Dis: [Severity of SARS-CoV-2 Infection in Pregnancy in Ontario: A Matched Cohort Analysis](#) (06 July 2022)

"Background: Pregnancy represents a physiological state associated with increased vulnerability to severe outcomes from infectious diseases, both for the pregnant person and developing infant. The SARS-CoV-2 pandemic may have important health consequences for pregnant individuals, who may also be more reluctant than non-pregnant people to accept vaccination.

Methods: We sought to estimate the degree to which increased severity of SARS-CoV-2 outcomes can be attributed to pregnancy using a population-based SARS-CoV-2 case file from Ontario, Canada. Due to varying propensity to receive vaccination, and changes in dominant circulating viral strains over time, a time-matched cohort study was performed to evaluate the relative risk of severe illness in pregnant women with SARS-CoV-2 compared to other SARS-CoV-2 infected women of childbearing age (10 to 49 years old). Risk of severe SARS-CoV-2 outcomes was evaluated in pregnant women and time-matched non-pregnant controls using multivariable conditional logistic regression.

Results: Compared to the rest of the population, non-pregnant women of childbearing age had an elevated risk of infection (standardized morbidity ratio (SMR) 1.28), while risk of infection was reduced among pregnant women (SMR 0.43). After adjustment for confounding pregnant women had a markedly elevated risk of hospitalization (adjusted OR 4.96, 95% CI 3.86 to 6.37) and ICU admission (adjusted OR 6.58, 95% CI 3.29 to 13.18). The relative increase in hospitalization risk associated with pregnancy was greater in women without comorbidities than in those with comorbidities (P for heterogeneity 0.004).

Conclusions: Given the safety of SARS-CoV-2 vaccines in pregnancy, risk-benefit calculus strongly favours SARS-CoV-2 vaccination in pregnant women."

JAMA Netw Open: [Comparison of Pregnancy Preferences Preceding vs Year 1 of the COVID-19 Pandemic](#) (05 July 2022)

"Question: How did people's pregnancy preferences change over the year before and the first year of the COVID-19 pandemic?

Findings: In a cohort study of 627 participants aged 15 to 34 years in the US Southwest, the summer 2020 COVID-19 case surge was associated with a significant short-term curtailing of a pre-COVID-19 trend toward greater desire for pregnancy. Trends were most pronounced among younger nulliparous and primiparous participants.

Meaning: Given that disruptive events can increase the desire to prevent or postpone pregnancy, expanded contraceptive and abortion care models like pharmacy access will be important to reproductive autonomy during future disruptions."

## Pediatric Population

### *News in Brief*

"Delta reinfection risk low among unvaccinated children — But scientists warn that the findings do not mean that children should not be vaccinated against COVID-19" ([Nature](#)).

### *Beyond COVID*

As of this writing, there are 332 children in 42 states under investigation for acute hepatitis of unknown etiology ([CDC](#)).

"Mysterious child hepatitis continues to vex researchers" ([Nature](#)).

### *Journal Articles*

Clin Infect Dis: [Lower Risk of Multisystem Inflammatory Syndrome in Children \(MIS-C\) with the Delta and Omicron variants of SARS-CoV-2](#) (05 July 2022)

"Little is known about the MIS-C risk with different SARS-CoV-2 variants. In Southeast England, MIS-C rates per confirmed SARS-CoV-2 infections in 0-16 years-olds were 56% lower (rate ratio, 0.34; 95%CI, 0.23-0.50) during pre-vaccine Delta, 66% lower (0.44; 0.28-0.69) during post-vaccine Delta and 95% lower (0.05; 0.02-0.10) during the Omicron period."

JAMA Netw Open: [Analysis of COVID-19-Related Croup and SARS-CoV-2 Variant Predominance in the US](#) (01 July 2022)

"The results of this cross-sectional study expand on recent single-center studies showing that hospitalizations for COVID-19-related croup increased after the onset of the Omicron variant....

Given that COVID-19 is likely to become endemic, our findings suggest that pediatric health systems should consider variation in SARS-CoV-2 phenotypes and their association with patient care. This may be especially true when other viral infections lead to surges in patient volume."

Pediatrics: [Health Impairments in Children and Adolescents After Hospitalization for Acute COVID-19 or MIS-C](#) (29 June 2022)

"Objective: To evaluate risk factors for post-discharge sequelae in children and adolescents after hospitalization for acute COVID-19 or multisystem inflammatory syndrome in children (MIS-C).

Methods: Multicenter prospective observational cohort study conducted in 25 US pediatric hospitals. Patients <21-years-old, hospitalized May 2020 to May 2021 for acute COVID-19 or MIS-C with follow-up 2-4 months after admission. We assessed readmissions, caregiver-reported persistent symptoms or activity impairment, and new morbidities identified by the Functional Status Scale. Multivariable regression was used to calculate adjusted risk ratios (aRR).

Results: Of 358 eligible patients, 2-4 month survey data were available for 119/155 (76.8%) with acute COVID-19 and 160/203 (78.8%) with MIS-C. Thirteen (11%) patients with acute COVID-19 and 12 (8%) with MIS-C had a readmission. Thirty-two (26.9%) patients with acute COVID-19 had persistent symptoms (22.7%) or activity impairment (14.3%) and 48 (30.0%) patients with MIS-C had persistent symptoms (20.0%) or activity impairment (21.3%). For patients with acute COVID-19, persistent symptoms (aRR, 1.29[95% CI, 1.04-1.59]) and activity impairment (aRR, 1.37[95% CI, 1.06-1.78]) were associated with more organs systems involved. Patients with MIS-C and pre-existing respiratory conditions more frequently had persistent symptoms (aRR, 3.09[95% CI, 1.55-6.14]) and those with obesity more frequently had activity impairment (aRR, 2.52[95% CI, 1.35-4.69]). New morbidities were infrequent (9% COVID-19 and 1% MIS-C).

Conclusions: Over one in four children hospitalized with acute COVID-19 or MIS-C experienced persistent symptoms or activity impairment for at least 2 months. Patients with MIS-C and respiratory conditions or obesity are at higher risk of prolonged recovery."

## Vaccines

### MMWR: [COVID-19 Vaccine Provider Availability and Vaccination Coverage Among Children Aged 5–11 Years — United States, November 1, 2021–April 25, 2022](#) (01 July 2022)

"What is already known about this topic? Although COVID-19 vaccination has been recommended for children aged 5–11 years since November 2021, coverage among this age group remains low.

What is added by this report? By April 25, 2022, most U.S. counties had a pharmacy or public health clinic offering COVID-19 vaccines to children aged 5–11 years; fewer counties had a pediatric clinic, family medicine clinic, or federally qualified health center. The availability of each provider type was associated with higher county-level vaccination coverage among children aged 5–11 years.

What are the implications for public health practice? Ensuring broad access to COVID-19 vaccines, in addition to other strategies to address vaccination barriers, could help increase vaccination coverage among children aged 5–11 years."

### MMWR: [Interim Recommendations of the Advisory Committee on Immunization Practices for Use of Moderna and Pfizer-BioNTech COVID-19 Vaccines in Children Aged 6 Months–5 Years — United States, June 2022](#) (01 July 2022)

"What is already known about this topic? On June 17, 2022, the Food and Drug Administration granted Emergency Use Authorization for the Moderna and Pfizer-BioNTech COVID-19 vaccines for children aged 6 months–5 years and 6 months–4 years, respectively.

What is added by this report? On June 18, 2022, the Advisory Committee on Immunization Practices (ACIP) issued interim recommendations for the use of the Moderna COVID-19 vaccine for children aged 6 months–5 years and for the Pfizer-BioNTech COVID-19 vaccine for children aged 6 months–4 years in the United States for prevention of COVID-19. ACIP determined that the benefits of vaccination outweigh risks for this population.

What are the implications for public health practice? Vaccination is important for protecting children aged 6 months–5 years against COVID-19."

### Lancet: [Effectiveness of BNT162b2 vaccine against SARS-CoV-2 infection and severe COVID-19 in children aged 5–11 years in Italy: a retrospective analysis of January–April, 2022](#) (30 June 2022)

"Background: By April 13, 2022, more than 4 months after the approval of BNT162b2 (Pfizer-BioNTech) for children, less than 40% of 5–11-year-olds in Italy had been vaccinated against COVID-19. Estimating how effective vaccination is in 5–11-year-olds in the current epidemiological context dominated by the omicron variant (B.1.1.529) is important to inform public health bodies in defining vaccination policies and strategies.

**Methods:** In this retrospective population analysis, we assessed vaccine effectiveness against SARS-CoV-2 infection and severe COVID-19, defined as an infection leading to hospitalisation or death, by linking the national COVID-19 surveillance system and the national vaccination registry. All Italian children aged 5-11 years without a previous diagnosis of infection were eligible for inclusion and were followed up from Jan 17 to April 13, 2022. All children with inconsistent vaccination data, diagnosed with SARS-CoV-2 infection before the start date of the study or without information on the municipality of residence were excluded from the analysis. With unvaccinated children as the reference group, we estimated vaccine effectiveness in those who were partly vaccinated (one dose) and those who were fully vaccinated (two doses).

**Findings:** By April 13, 2022, 1 063 035 (35·8%) of the 2 965 918 children aged 5-11 years included in the study had received two doses of the vaccine, 134 386 (4·5%) children had received one dose only, and 1 768 497 (59·6%) were unvaccinated. During the study period, 766 756 cases of SARS-CoV-2 infection and 644 cases of severe COVID-19 (627 hospitalisations, 15 admissions to intensive care units, and two deaths) were notified. Overall, vaccine effectiveness in the fully vaccinated group was 29·4% (95% CI 28·5-30·2) against SARS-CoV-2 infection and 41·1% (22·2-55·4) against severe COVID-19, whereas vaccine effectiveness in the partly vaccinated group was 27·4% (26·4-28·4) against SARS-CoV-2 infection and 38·1% (20·9-51·5) against severe COVID-19. Vaccine effectiveness against infection peaked at 38·7% (37·7-39·7) at 0-14 days after full vaccination and decreased to 21·2% (19·7-22·7) at 43-84 days after full vaccination.

**Interpretation:** Vaccination against COVID-19 in children aged 5-11 years in Italy showed a lower effectiveness in preventing SARS-CoV-2 infection and severe COVID-19 than in individuals aged 12 years and older. Effectiveness against infection appears to decrease after completion of the current primary vaccination cycle."

NEJM: [BNT162b2 Vaccine Effectiveness against Omicron in Children 5 to 11 Years of Age](#) (29 June 2022)

**Background:** Limited evidence is available on the real-world effectiveness of the BNT162b2 vaccine against coronavirus disease 2019 (Covid-19) and specifically against infection with the omicron variant among children 5 to 11 years of age.

**Methods:** Using data from the largest health care organization in Israel, we identified a cohort of children 5 to 11 years of age who were vaccinated on or after November 23, 2021, and matched them with unvaccinated controls to estimate the vaccine effectiveness of BNT162b2 among newly vaccinated children during the omicron wave. Vaccine effectiveness against documented severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection and symptomatic Covid-19 was estimated after the first and second vaccine doses. The cumulative incidence of each outcome in the two study groups through

January 7, 2022, was estimated with the use of the Kaplan-Meier estimator, and vaccine effectiveness was calculated as 1 minus the risk ratio. Vaccine effectiveness was also estimated in age subgroups.

Results: Among 136,127 eligible children who had been vaccinated during the study period, 94,728 were matched with unvaccinated controls. The estimated vaccine effectiveness against documented infection was 17% (95% confidence interval [CI], 7 to 25) at 14 to 27 days after the first dose and 51% (95% CI, 39 to 61) at 7 to 21 days after the second dose. The absolute risk difference between the study groups at days 7 to 21 after the second dose was 1905 events per 100,000 persons (95% CI, 1294 to 2440) for documented infection and 599 events per 100,000 persons (95% CI, 296 to 897) for symptomatic Covid-19. The estimated vaccine effectiveness against symptomatic Covid-19 was 18% (95% CI, -2 to 34) at 14 to 27 days after the first dose and 48% (95% CI, 29 to 63) at 7 to 21 days after the second dose. We observed a trend toward higher vaccine effectiveness in the youngest age group (5 or 6 years of age) than in the oldest age group (10 or 11 years of age).

Conclusions: Our findings suggest that as omicron was becoming the dominant variant, two doses of the BNT162b2 messenger RNA vaccine provided moderate protection against documented SARS-CoV-2 infection and symptomatic Covid-19 in children 5 to 11 years of age."

#### *Beyond COVID*

#### MMWR: [Interim Analysis of Acute Hepatitis of Unknown Etiology in Children Aged <10 Years — United States, October 2021–June 2022](#) (01 July 2022)

"What is already known about this topic? During October 2021–February 2022, a cluster of children with hepatitis of unknown etiology and adenovirus infection was identified in the United States. On April 21, after reports of similar cases in other countries, CDC advised clinicians to report patients aged <10 years with hepatitis of unknown etiology to public health authorities.

What is added by this report? During October 1, 2021–June 15, 2022, a total of 296 U.S. pediatric patients received a diagnosis of hepatitis of unknown etiology, with adenovirus detected among 45%. Preliminary analyses have not identified common exposures (e.g., travel or toxicants).

What are the implications for public health practice? The investigation is ongoing; further clinical data are needed to understand the cause of these cases and to assess the potential association with adenovirus."

## Other Infectious Diseases and Public Health Threats

### News in Brief

"Trial of potential universal flu vaccine opens at NIH Clinical Center" ([NIAID](#)).

"After COVID, African countries vow to take the fight to malaria" ([Nature](#)).

"Ghana reports first-ever suspected cases of Marburg virus disease" ([WHO](#)).

One person has died and 22 have been hospitalized in a 10-state *Listeria* outbreak linked to ice cream ([CDC](#); somewhat related, see also: [Clinical Infectious Disease article](#)).

"Syphilis is rising—and may not be recognized" ([Forbes](#)).

"A Florida county is quarantining after discovery of invasive Giant African land snail" ([CNN](#)).

"What polio's UK presence means for global health — A form of polio derived from the vaccine is probably circulating in the United Kingdom, highlighting the ongoing need for polio vaccination worldwide" ([Nature](#)).

### Journal Articles

Lancet Infect Dis: [Outbreak of sexually transmitted, extensively drug-resistant \*Shigella sonnei\* in the UK, 2021–22: a descriptive epidemiological study](#) (06 July 2022)

"Background: Shigellosis, traditionally a foodborne and waterborne infection, causes substantial morbidity globally. It is now a leading cause of sexually transmitted gastroenteritis among gay, bisexual, and other men who have sex with men (MSM). We describe an ongoing outbreak of extensively drug-resistant (XDR) *Shigella sonnei* in the UK.

Methods: Routine laboratory surveillance (Second Generation Surveillance System, Gastrointestinal Data Warehouse) identified an exceedance of *S sonnei* clade 5 in England, first detected in September, 2021. Cases within this clade were subsequently reported from Scotland, Wales, and Northern Ireland. Confirmed cases in this outbreak were defined as individuals diagnosed with *S sonnei* clade 5 in the UK, with a specimen date between Sept 1, 2021, and Feb 9, 2022, who were genetically confirmed as part of a ten-single nucleotide polymorphism (SNP) linkage cluster. We used whole-genome sequencing with SNP typing to identify genomic clusters and antimicrobial-resistance determinants, analysing cases across the UK. We collected demographic, epidemiological, and clinical data from people infected with *S sonnei* clade 5 in England using questionnaires (standard and bespoke outbreak questionnaires). We used descriptive summary statistics to characterise cases.

Findings: 72 cases (70 [97%] male, median age 34 years [IQR 27–39]) belonging to the ten-SNP single linkage cluster of *S sonnei* clade 5 were identified between Sept 4, 2021, and Feb

9, 2022. Isolates were predominantly XDR, with 66 (92%) of 72 harbouring blaCTX-M-27, a plasmid-mediated gene for production of extended-spectrum  $\beta$ -lactamases (ESBLs). Of 33 cases with clinical data, 19 (58%) received antibiotics and eight (24%) were hospitalised. 21 (78%) of 27 cases with completed bespoke outbreak questionnaires were HIV-negative MSM taking HIV pre-exposure prophylaxis (PrEP) who reported sexual contacts in the UK and Europe within the incubation period.

Interpretation: We highlight the rapid dissemination of XDR ESBL-producing *S. sonnei* in sexual networks of MSM. We recommend strengthening shigella testing where clinically indicated, antimicrobial-resistance surveillance, and integrated health promotion messaging among all MSM, including PrEP users, to reduce the burden of shigellosis."

## Special Topic: Monkeypox

### *News in Brief*

"CDC activates emergency operations center for monkeypox response" ([CDC](#)).

"Monkeypox cases surge as WHO stops short of declaring a global emergency" ([WP](#)).

Europe has more than 4,000 cases of monkeypox ([CIDRAP](#)), while US cases top 600 in 34 states ([CIDRAP](#)).

"Tens of thousands of monkeypox vaccines rushed to clinics" ([WP](#)).

"U.S. orders 2.5 million more doses of Bavarian Nordic's vaccine for monkeypox" ([Reuters](#)).

### *Journal Articles*

Lancet Infect Dis: [Demographic and clinical characteristics of confirmed human monkeypox virus cases in individuals attending a sexual health centre in London, UK: an observational analysis](#) (01 July 2022)

"Background: Historically, human monkeypox virus cases in the UK have been limited to imported infections from west Africa. Currently, the UK and several other countries are reporting a rapid increase in monkeypox cases among individuals attending sexual health clinics, with no apparent epidemiological links to endemic areas. We describe demographic and clinical characteristics of patients diagnosed with human monkeypox virus attending a sexual health centre.

**Methods:** In this observational analysis, we considered patients with confirmed monkeypox virus infection via PCR detection attending open-access sexual health clinics in London, UK, between May 14 and May 25, 2022. We report hospital admissions and concurrent sexually transmitted infection (STI) proportions, and describe our local response within the first 2 weeks of the outbreak.

**Findings:** Monkeypox virus infection was confirmed in 54 individuals, all identifying as men who have sex with men (MSM), with a median age of 41 years (IQR 34-45). 38 (70%) of 54 individuals were White, 26 (48%) were born in the UK, and 13 (24%) were living with HIV. 36 (67%) of 54 individuals reported fatigue or lethargy, 31 (57%) reported fever, and ten (18%) had no prodromal symptoms. All patients presented with skin lesions, of which 51 (94%) were anogenital. 37 (89%) of 54 individuals had skin lesions affecting more than one anatomical site and four (7%) had oropharyngeal lesions. 30 (55%) of 54 individuals had lymphadenopathy. One in four patients had a concurrent STI. Five (9%) of 54 individuals required admission to hospital, mainly due to pain or localised bacterial cellulitis requiring antibiotic intervention or analgesia. We recorded no fatal outcomes.

**Interpretation:** Autochthonous community monkeypox virus transmission is currently observed among MSM in the UK. We found a high proportion of concomitant STIs and frequent anogenital symptoms, suggesting transmissibility through local inoculation during close skin-to-skin or mucosal contact, during sexual activity. Additional resources are required to support sexual health and other specialist services in managing this condition. A review of the case definition and better understanding of viral transmission routes are needed to shape infection control policies, education and prevention strategies, and contact tracing."

## References

### ***Journal Articles***

AMA J Ethics: Bricknell M, Whetham D, Sullivan R, Mahoney P. How Should Access to Military Health Care Facilities Be Controlled in Conflict? *AMA J Ethics*. 2022 Jun 1;24(6):E472-477. English, Arabic. doi: 10.1001/amaethics.2022.472. PMID: 35713914. Link: <https://journalofethics.ama-assn.org/article/how-should-access-military-health-care-facilities-be-controlled-conflict/2022-06>

BMJ: Duval D, Palmer JC, Tudge I, Pearce-Smith N, O'Connell E, Bennett A, Clark R. Long distance airborne transmission of SARS-CoV-2: rapid systematic review. *BMJ*. 2022 Jun 29;377:e068743. doi: 10.1136/bmj-2021-068743. PMID: 35768139; PMCID: PMC9240778. Link: <https://www.bmjjournals.org/content/377/bmj-2021-068743.short>

Clin Infect Dis: Baggs J, Rose AN, McCarthy NL, Wolford H, Srinivasan A, Jernigan JA, Reddy SC. Antibiotic Resistant Infections among COVID-19 Inpatients in U.S. Hospitals. *Clin Infect Dis.* 2022 Jul 2:ciac517. doi: 10.1093/cid/ciac517. Epub ahead of print. PMID: 35779273. Link: <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciac517/6627591>

Clin Infect Dis: Cohen JM, Carter MJ, Ronny Cheung C, Ladhami S; Evelina PIMS-TS Study Group. Lower Risk of Multisystem Inflammatory Syndrome in Children (MIS-C) with the Delta and Omicron variants of SARS-CoV-2. *Clin Infect Dis.* 2022 Jul 5:ciac553. doi: 10.1093/cid/ciac553. Epub ahead of print. PMID: 35788276. Link: <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciac553/6631205>

Clin Infect Dis: Daniel Kelly J, Lu S, Anglin K, Garcia-Knight M, Pineda-Ramirez J, Goldberg SA, Tassetto M, Zhang A, Donohue K, Davidson MC, Romero M, Sanchez RD, Djomaleu M, Mathur S, Chen JY, Forman CA, Servellita V, Montejano RD, Shak JR, Rutherford GW, Deeks SG, Abedi GR, Rolfs MA, Saydah S, Briggs-Hagen M, Peluso MJ, Chiu C, Midgley CM, Andino R, Martin JN. Magnitude and determinants of SARS-CoV-2 household transmission: a longitudinal cohort study. *Clin Infect Dis.* 2022 Jul 5:ciac545. doi: 10.1093/cid/ciac545. Epub ahead of print. PMID: 35788827. Link: <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciac545/6631204>

Clin Infect Dis: Maponga TG, Jeffries M, Tegally H, Sutherland A, Wilkinson E, Lessells RJ, Msomi N, van Zyl G, de Oliveira T, Preiser W. Persistent SARS-CoV-2 infection with accumulation of mutations in a patient with poorly controlled HIV infection. *Clin Infect Dis.* 2022 Jul 6:ciac548. doi: 10.1093/cid/ciac548. Epub ahead of print. PMID: 35793242. Link: <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciac548/6632801>

Clin Infect Dis: Murison KR, Grima AA, Simmons AE, Tuite AR, Fisman DN. Severity of SARS-CoV-2 Infection in Pregnancy in Ontario: A Matched Cohort Analysis. *Clin Infect Dis.* 2022 Jul 6:ciac544. doi: 10.1093/cid/ciac544. Epub ahead of print. PMID: 35792660. Link: <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciac544/6632524>

Clin Infect Dis: Tam AR, Zhang RR, Lung KC, Liu R, Leung KY, Liu D, Fan Y, Lu L, Lam AHY, Chung TWH, Yip CCY, Lo J, Wu AKL, Lee R, Sin S, Ng PY, Chan WM, Shum HP, Yan WW, Chan JFW, Cheng VCC, Lau CS, Kai-Wang K, Chan KH, Yuen KY, Hung IFN. Early treatment of high-risk hospitalized COVID-19 patients with a combination of interferon beta-1b and remdesivir: a phase 2 open-label randomized controlled trial. *Clin Infect Dis.* 2022 Jun 28:ciac523. doi: 10.1093/cid/ciac523. Epub ahead of print. PMID: 35762834. Link: <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciac523/6619124>

Emerg Infect Dis: Nevejan L, Cuypers L, Laenen L, Van Loo L, Vermeulen F, Wollants E, et al. Early SARS-CoV-2 reinfections within 60 days and implications for retesting policies. *Emerg Infect Dis.* 2022 Aug [23 June 2022]. <https://doi.org/10.3201/eid2808.220617> Link: [https://wwwnc.cdc.gov/eid/article/28/8/22-0617\\_article](https://wwwnc.cdc.gov/eid/article/28/8/22-0617_article)

Int J Environ Res Public Health: Gwee SXW, Chua PEY, Pang J. SARS-CoV-2 Transmission in the Military during the Early Phase of the Pandemic-A Systematic Analysis. *Int J Environ Res Public Health.* 2022 Jun 16;19(12):7418. doi: 10.3390/ijerph19127418. PMID: 35742662; PMCID: PMC9224230. Link: <https://www.mdpi.com/1660-4601/19/12/7418>

J Infect Dis: Ku JH, Levin MJ, Luo Y, Florea A, Lin IC, Tian Y, Tseng HF. Risk of severe COVID-19 disease in individuals with Down syndrome: a matched cohort study from a large, integrated health care system. *J Infect Dis.* 2022 Jun 24:jiac236. doi: 10.1093/infdis/jiac236. Epub ahead of print. PMID: 35749312. Link: <https://academic.oup.com/jid/advance-article/doi/10.1093/infdis/jiac236/6617571>

J Infect Dis: Streng BMM, Bont M, Delemarre EM, Binnendijk RS, Smit G, den Hartog G, Coppus AMW, de Vries E, Weijerman ME, Lamberts R, de Graaf G, van der Klis FR, Vidarsson G, Rave N, Bont LJ, Wildenbeest JG. Decreased antibody response after SARS-CoV-2 vaccination in patients with Down Syndrome. *J Infect Dis.* 2022 Jun 24:jiac235. doi: 10.1093/infdis/jiac235. Epub ahead of print. PMID: 35748853. Link: <https://academic.oup.com/jid/advance-article/doi/10.1093/infdis/jiac235/6617441>

JAMA: Azzolini E, Levi R, Sarti R, Pozzi C, Mollura M, Mantovani A, Rescigno M. Association Between BNT162b2 Vaccination and Long COVID After Infections Not Requiring Hospitalization in Health Care Workers. *JAMA.* 2022 Jul 1. doi: 10.1001/jama.2022.11691. Epub ahead of print. PMID: 35796131. Link: <https://jamanetwork.com/journals/jama/fullarticle/2794072>

JAMA Intern Med: Bouadma L, Mekontso-Dessap A, Burdet C, Merdji H, Poissy J, Dupuis C, Guitton C, Schwebel C, Cohen Y, Bruel C, Marzouk M, Geri G, Cerf C, Mégarbane B, Garçon P, Kipnis E, Visseaux B, Beldjoudi N, Chevret S, Timsit JF; COVIDICUS Study Group. High-Dose Dexamethasone and Oxygen Support Strategies in Intensive Care Unit Patients With Severe COVID-19 Acute Hypoxemic Respiratory Failure: The COVIDICUS Randomized Clinical Trial. *JAMA Intern Med.* 2022 Jul 5. doi: 10.1001/jamainternmed.2022.2168. Epub ahead of print. PMID: 35788622. Link:

<https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2794040>

JAMA Intern Med: Shiels MS, Haque AT, Berrington de González A, Freedman ND. Leading Causes of Death in the US During the COVID-19 Pandemic, March 2020 to October 2021. *JAMA Intern Med.* 2022 Jul 5. doi: 10.1001/jamainternmed.2022.2476. Epub ahead of print. PMID: 35788262. Link: <https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2794043>

JAMA Netw Open: Lefchak B, Nickel A, Lammers S, Watson D, Hester GZ, Bergmann KR. Analysis of COVID-19-Related Croup and SARS-CoV-2 Variant Predominance in the US. *JAMA Netw Open.* 2022 Jul 1;5(7):e2220060. doi: 10.1001/jamanetworkopen.2022.20060. PMID: 35796213. Link: <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2793808>

JAMA Netw Open: Rocca CH, Parra M, Muñoz I, Foster DG, Boscardin WJ, Ralph LJ. Comparison of Pregnancy Preferences Preceding vs Year 1 of the COVID-19 Pandemic. *JAMA Netw Open*. 2022 Jul 1;5(7):e2220093. doi: 10.1001/jamanetworkopen.2022.20093. PMID: 35788671. Link: <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2793868>

JAMA Netw Open: Steele MK, Couture A, Reed C, Iuliano D, Whitaker M, Fast H, Hall AJ, MacNeil A, Cadwell B, Marks KJ, Silk BJ. Estimated Number of COVID-19 Infections, Hospitalizations, and Deaths Prevented Among Vaccinated Persons in the US, December 2020 to September 2021. *JAMA Netw Open*. 2022 Jul 1;5(7):e2220385. doi: 10.1001/jamanetworkopen.2022.20385. PMID: 35793085. Link: <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2793913>

JAMA Otolaryngol Head Neck Surg: Gupta S, Lee JJ, Perrin A, Khan A, Smith HJ, Farrell N, Kallogjeri D, Piccirillo JF. Efficacy and Safety of Saline Nasal Irrigation Plus Theophylline for Treatment of COVID-19-Related Olfactory Dysfunction: The SCENT2 Phase 2 Randomized Clinical Trial. *JAMA Otolaryngol Head Neck Surg*. 2022 Jul 7. doi: 10.1001/jamaoto.2022.1573. Epub ahead of print. PMID: 35797024. Link: <https://jamanetwork.com/journals/jamaotolaryngology/fullarticle/2793987>

JAMA Psychiatry: Frontera JA, Simon NM. Bridging Knowledge Gaps in the Diagnosis and Management of Neuropsychiatric Sequelae of COVID-19. *JAMA Psychiatry*. 2022 Jun 29. doi: 10.1001/jamapsychiatry.2022.1616. Epub ahead of print. PMID: 35767287. Link: <https://jamanetwork.com/journals/jamapsychiatry/fullarticle/2793903>

Lancet: Sacco C, Del Manso M, Mateo-Urdiales A, Rota MC, Petrone D, Riccardo F, Bella A, Siddu A, Battilomo S, Proietti V, Popoli P, Menniti Ippolito F, Palamara AT, Brusaferro S, Rezza G, Pezzotti P, Fabiani M; Italian National COVID-19 Integrated Surveillance System and the Italian COVID-19 vaccines registry. Effectiveness of BNT162b2 vaccine against SARS-CoV-2 infection and severe COVID-19 in children aged 5-11 years in Italy: a retrospective analysis of January-April, 2022. *Lancet*. 2022 Jun 30;400(10346):97–103. doi: 10.1016/S0140-6736(22)01185-0. Epub ahead of print. PMID: 35780801; PMCID: PMC9246475. Link: [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(22\)01185-0/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(22)01185-0/fulltext)

Lancet Infect Dis: Charles H, Prochazka M, Thorley K, et al. Outbreak of sexually transmitted, extensively drug-resistant *Shigella sonnei* in the UK, 2021–22: a descriptive epidemiological study. *Lancet Infect Dis*. Published: July 06, 2022 DOI: [https://doi.org/10.1016/S1473-3099\(22\)00370-X](https://doi.org/10.1016/S1473-3099(22)00370-X) Link: [https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(22\)00370-X/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00370-X/fulltext)

Lancet Infect Dis: Girometti N, Byrne R, Bracchi M, Heskin J, McOwan A, Tittle V, Gedela K, Scott C, Patel S, Gohil J, Nugent D, Suchak T, Dickinson M, Feeney M, Mora-Peris B, Stegmann K, Plaha K, Davies G, Moore LSP, Mughal N, Asboe D, Boffito M, Jones R, Whitlock G. Demographic and clinical characteristics of confirmed human monkeypox virus cases in individuals attending

a sexual health centre in London, UK: an observational analysis. *Lancet Infect Dis.* 2022 Jul 1:S1473-3099(22)00411-X. doi: 10.1016/S1473-3099(22)00411-X. Epub ahead of print. PMID: 35785793. Link: [https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(22\)00411-X/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00411-X/fulltext)

Mil Med: Glendening J, Bickford B, Markert R, Yuhas J, Berglund A, Kelly D, Scott J, Burton K. Addressing Persistent Vaccine Hesitancy in a Military Community Through a Physician-Led Intervention. *Mil Med.* 2022 Jun 28:usac176. doi: 10.1093/milmed/usac176. Epub ahead of print. PMID: 35762461. Link: <https://academic.oup.com/milmed/advance-article/doi/10.1093/milmed/usac176/6618997>

Mil Med: Murray AL, Perez Koehlmoos T, Banaag A, Schvey NA. Caring for Service Members Who Have Been Sexually Assaulted: The Military Health System. *Mil Med.* 2022 Jun 25:usac175. doi: 10.1093/milmed/usac175. Epub ahead of print. PMID: 35751587. Link: <https://academic.oup.com/milmed/advance-article/doi/10.1093/milmed/usac175/6617864>

MMWR: Cates J, Baker JM, Almendares O, et al. Interim Analysis of Acute Hepatitis of Unknown Etiology in Children Aged <10 Years — United States, October 2021–June 2022. *MMWR Morb Mortal Wkly Rep.* ePUB: 24 June 2022. DOI: <http://dx.doi.org/10.15585/mmwr.mm7126e1> Link: <https://www.cdc.gov/mmwr/volumes/71/wr/mm7126e1.htm>

MMWR: DeCuir J, Meng L, Pan Y, et al. COVID-19 Vaccine Provider Availability and Vaccination Coverage Among Children Aged 5–11 Years — United States, November 1, 2021–April 25, 2022. *MMWR Morb Mortal Wkly Rep* 2022;71:847–851. DOI: <http://dx.doi.org/10.15585/mmwr.mm7126a3> Link: <https://www.cdc.gov/mmwr/volumes/71/wr/mm7126a3.htm>

MMWR: Fleming-Dutra KE, Wallace M, Moulia DL, et al. Interim Recommendations of the Advisory Committee on Immunization Practices for Use of Moderna and Pfizer-BioNTech COVID-19 Vaccines in Children Aged 6 Months–5 Years — United States, June 2022. *MMWR Morb Mortal Wkly Rep.* ePUB: 28 June 2022. DOI: <http://dx.doi.org/10.15585/mmwr.mm7126e2> Link: <https://www.cdc.gov/mmwr/volumes/71/wr/mm7126e2.htm>

MMWR: Singson JR, Kirley PD, Pham H, et al. Factors Associated with Severe Outcomes Among Immunocompromised Adults Hospitalized for COVID-19 — COVID-NET, 10 States, March 2020–February 2022. *MMWR Morb Mortal Wkly Rep* 2022;71:878–884. DOI: <http://dx.doi.org/10.15585/mmwr.mm7127a3> Link: <https://www.cdc.gov/mmwr/volumes/71/wr/mm7127a3.htm>

Nat Commun: Thompson EJ, Williams DM, Walker AJ, Mitchell RE, Niedzwiedz CL, Yang TC, Huggins CF, Kwong ASF, Silverwood RJ, Di Gessa G, Bowyer RCE, Northstone K, Hou B, Green MJ, Dodgeon B, Doores KJ, Duncan EL, Williams FMK; OpenSAFELY Collaborative, Steptoe A,

Porteous DJ, McEachan RRC, Tomlinson L, Goldacre B, Patalay P, Ploubidis GB, Katikireddi SV, Tilling K, Rentsch CT, Timpson NJ, Chaturvedi N, Steves CJ. Long COVID burden and risk factors in 10 UK longitudinal studies and electronic health records. *Nat Commun.* 2022 Jun 28;13(1):3528. doi: 10.1038/s41467-022-30836-0. PMID: 35764621; PMCID: PMC9240035. Link: <https://www.nature.com/articles/s41467-022-30836-0>

NEJM: Cohen-Stavi CJ, Magen O, Barda N, Yaron S, Peretz A, Netzer D, Giaquinto C, Judd A, Leibovici L, Hernán MA, Lipsitch M, Reis BY, Balicer RD, Dagan N. BNT162b2 Vaccine Effectiveness against Omicron in Children 5 to 11 Years of Age. *N Engl J Med.* 2022 Jun 29. doi: 10.1056/NEJMoa2205011. Epub ahead of print. PMID: 35767475. Link: <https://www.nejm.org/doi/full/10.1056/NEJMoa2205011>

NEJM Evid: Barnette KG, Gordon MS, Rodriguez D, et al. Oral Sabizabulin for High-Risk, Hospitalized Adults with Covid-19: Interim Analysis. *NEJM Evid.* Published July 6, 2022 DOI: <https://doi.org/10.1056/EVIDoa2200145> Link: <https://evidence.nejm.org/doi/10.1056/EVIDoa2200145>

Pediatrics: Maddux AB, Berbert L, Young CC, Feldstein LR, Zambrano LD, Kucukak S, Newhams MM, Miller K, FitzGerald MM, He J, Halasa NB, Cvijanovich NZ, Loftis LL, Walker TC, Schwartz SP, Gertz SJ, Tarquinio KM, Fitzgerald JC, Kong M, Schuster JE, Mack EH, Hobbs CV, Rowan CM, Staat MA, Zinter MS, Irby K, Crandall H, Flori H, Cullimore ML, Nofziger RA, Shein SL, Gaspers MG, Hume JR, Levy ER, Chen SR, Patel MM, Tenforde MW, Weller E, Campbell AP, Randolph AG. Health Impairments in Children and Adolescents After Hospitalization for Acute COVID-19 or MIS-C. *Pediatrics.* 2022 Jun 29. doi: 10.1542/peds.2022-057798. Epub ahead of print. PMID: 35765138. Link: <https://publications.aap.org/pediatrics/article/doi/10.1542/peds.2022-057798/188356/Health-Impairments-in-Children-and-Adolescents>

Radiology: Matheson AM, McIntosh MJ, Kooner HK, Lee J, Desaigoudar V, Bier E, Driehuys B, Svenningsen S, Santyr GE, Kirby M, Albert MS, Shepelytskyi Y, Grynko V, Ouriadov A, Abdelrazek M, Dhaliwal I, Nicholson JM, Parraga G. Persistent <sup>129</sup>Xe MRI Pulmonary and CT Vascular Abnormalities in Symptomatic Individuals with Post-Acute COVID-19 Syndrome. *Radiology.* 2022 Jun 28:220492. doi: 10.1148/radiol.220492. Epub ahead of print. PMID: 35762891. Link: <https://pubs.rsna.org/doi/10.1148/radiol.220492>

Radiology: Vicentini JRT, Habibollahi S, Staffa SJ, Simeone FJ, Kheterpal AB, Graeber AR, Bredella MA, Chang CY. The Relationship of Imaging-guided Corticosteroid Injections to COVID-19 Incidence in the Pandemic Recovery Period. *Radiology.* 2022 Jul 5:220271. doi: 10.1148/radiol.220271. Epub ahead of print. PMID: 35787202. Link: <https://pubs.rsna.org/doi/10.1148/radiol.220271>

### ***News in Brief***

BHR: Becker's Hospital Review. Erica Carbajal. UT Southwestern researchers create rapid COVID-19 test to detect variants (06 July 2022). Link:

<https://www.beckershospitalreview.com/lab/ut-southwestern-researchers-create-rapid-covid-19-test-to-detect-variants.html>

BI: Business Insider. Jake Epstein. WHO official says the more times a person gets COVID-19, the more likely they are to be 'unlucky' and get long COVID (27 June 2022). Link:

<https://www.businessinsider.com/who-official-individuals-coronavirus-infection-unlucky-long-covid-2022-6>

CDC: Centers for Disease Control and Prevention. CDC Activates Emergency Operations Center for Monkeypox Response (28 June 2022). Link:

<https://www.cdc.gov/media/releases/2022/s0628-monkeypox-eoc.html>

CDC: Centers for Disease Control and Prevention. Listeria Outbreak Linked to Ice Cream (accessed 07 July 2022). Link: <https://www.cdc.gov/listeria/outbreaks/monocytogenes-06-22/index.html>

CDC: Centers for Disease Control and Prevention. Persons Under Investigation: Children with Acute Hepatitis of Unknown Etiology (updated 08 July 2022). Link:

<https://www.cdc.gov/ncird/investigation/hepatitis-unknown-cause/updates.html>

CIDRAP: Center for Infectious Disease Research and Policy. Stephanie Soucheray. Monkeypox soars in Europe, with more than 4,000 cases (30 June 2022). Link:

<https://www.cidrap.umn.edu/news-perspective/2022/06/monkeypox-soars-europe-more-4000-cases>

CIDRAP: Center for Infectious Disease Research and Policy. Stephanie Soucheray. US monkeypox cases top 600 in 34 states (07 July 2022). Link: <https://www.cidrap.umn.edu/news-perspective/2022/07/us-monkeypox-cases-top-600-34-states>

CNN: CNN. Zoe Sottile. A Florida county is quarantining after discovery of invasive Giant African land snail (03 July 2022). Link: <https://www.cnn.com/2022/07/03/us/giant-african-snail-florida-scn-trnd/index.html>

FDA: US Food & Drug Administration. FDA Recommends Inclusion of Omicron BA.4/5 Component for COVID-19 Vaccine Booster Doses (30 June 2022). Link:

<https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-recommends-inclusion-omicron-ba45-component-covid-19-vaccine-booster>

Forbes: Forbes. Judy Stone. Syphilis Is Rising—And May Not Be Recognized (06 July 2022). Link:

<https://www.forbes.com/sites/judystone/2022/07/06/syphilis-is-rising-and-may-not-be-recognized/?sh=1ef7e8023977>

Guardian: The Guardian. David Cox. Can our mitochondria help to beat long Covid? (26 June 2022). Link: <https://www.theguardian.com/science/2022/jun/26/can-our-mitochondria-help-to-beat-long-covid>

Nature: Nature. Ewen Callaway. Fast-evolving COVID variants complicate vaccine updates (27 June 2022). Link: <https://www.nature.com/articles/d41586-022-01771-3>

Nature: Nature. Liam Drew. Did COVID vaccine mandates work? What the data say (06 July 2022). Link: <https://www.nature.com/articles/d41586-022-01827-4>

Nature: Nature. Giorgia Guglielmi. What polio's UK presence means for global health (04 July 2022). Link: <https://www.nature.com/articles/d41586-022-01802-z>

Nature: Nature. Heidi Ledford. Mysterious child hepatitis continues to vex researchers (24 June 2022). Link: <https://www.nature.com/articles/d41586-022-01706-y>

Nature: Nature. Heidi Ledford. Delta reinfection risk low among unvaccinated children (29 June 2022, clarification 05 July 2022). Link: <https://www.nature.com/articles/d41586-022-01763-3>

Nature: Nature. Smriti Mallapaty. First reported case of a person getting COVID from a cat (29 June 2022). Link: <https://www.nature.com/articles/d41586-022-01792-y>

Nature: Nature. Smriti Mallapaty. COVID variants found in sewage weeks before showing up in tests (08 July 2022). Link: <https://www.nature.com/articles/d41586-022-01874-x>

Nature: Nature. Asher Mullard. COVID antibody drugs have saved lives — so why aren't they more popular? (29 June 2022). Link: <https://www.nature.com/articles/d41586-022-01735-7>

Nature: Nature. T.V. Padma. After COVID, African countries vow to take the fight to malaria (01 July 2022). Link: <https://www.nature.com/articles/d41586-022-01795-9>

NIAID: National Institute of Allergy and Infectious Diseases. Trial of Potential Universal Flu Vaccine Opens at NIH Clinical Center Link: <https://www.niaid.nih.gov/news-events/trial-potential-universal-flu-vaccine-opens-nih-clinical-center>

NPR: National Public Radio. Will Stone. Still testing positive after day 10? How to decide when to end your COVID isolation (30 June 2022). Link: <https://www.npr.org/sections/health-shots/2022/06/30/1108615724/positive-test-isolation>

Reuters: Reuters. BioNTech, Pfizer to start testing universal vaccine for coronaviruses (29 June 2022). Link: <https://www.reuters.com/business/healthcare-pharmaceuticals/biontech-pfizer-starting-testing-universal-coronavirus-vaccine-h2-2022-06-29/>

Reuters: Reuters. U.S. orders 2.5 million more doses of Bavarian Nordic's vaccine for monkeypox (01 July 2022). Link: <https://www.reuters.com/business/healthcare-pharmaceuticals/biontech-pfizer-starting-testing-universal-coronavirus-vaccine-h2-2022-06-29/>

[pharmaceuticals/us-orders-25-mln-more-doses-bavarian-nordics-vaccine-monkeypox-2022-07-01/](https://www.pharmaceuticals-us-orders-25-mln-more-doses-bavarian-nordics-vaccine-monkeypox-2022-07-01/)

STAT: STATnews. Edward Chen. Doctors are clamoring for more clarity on Paxlovid prescribing amid Covid-19 rebound concerns (07 July 2022). Link:

<https://www.statnews.com/2022/07/07/paxlovid-prescribing-covid19-rebounds-data/>

STAT: STATnews. Elizabeth Cooney. Estimates of long Covid are startlingly high. Here's how to understand them (06 July 2022). Link: <https://www.statnews.com/2022/07/06/understanding-long-covid-estimates/>

STAT: STATnews. David C. Harvey. The next epidemic may be here. The U.S. isn't ready for it (28 June 2022). Link: <https://www.statnews.com/2022/06/28/next-epidemic-monkeypox-may-be-here-us-isnt-ready-for-it/>

STAT: STATnews. Sarah Mupo. The 41 best books and podcasts on health and science to check out this summer (06 July 2022). Link: <https://www.statnews.com/2022/07/06/stat-summer-book-list-podcasts-2022/>

Time: Time. Jamie Ducharme. You Could Have Long COVID and Not Even Know It (28 June 2022). Link: <https://time.com/6191655/long-covid-under-diagnosed/>

Wired: Wired Maggie Chen. The Secrets of Covid 'Brain Fog' Are Starting to Lift (01 July 2022). Link: <https://www.wired.com/story/the-secrets-of-covid-brain-fog-are-starting-to-lift/>

WHO: World Health Organization. Ghana reports first-ever suspected cases of Marburg virus disease (07 July 2022). Link: <https://www.afro.who.int/countries/ghana/news/ghana-reports-first-ever-suspected-cases-marburg-virus-disease>

WP: Washington Post. Judith Graham. Long covid symptoms are often overlooked in seniors (26 June 2022). Link: <https://www.washingtonpost.com/health/2022/06/26/long-covid-seniors/>

WP: Washington Post. Dan Diamond, Lena H. Sun, and Fenit Nirappil. Tens of thousands of monkeypox vaccines rushed to clinics (28 June 2022). Link: <https://www.washingtonpost.com/health/2022/06/28/monkeypox-vaccination-strategy-us/>

WP: Washington Post. Carolyn Y. Johnson. Omicron-based coronavirus booster shots will roll out this fall (30 June 2022). Link:

<https://www.washingtonpost.com/health/2022/06/30/omicron-vaccine-booster-fall/>

WP: Washington Post. Rachel Pannett and Annabelle Timsit. Monkeypox cases surge as WHO stops short of declaring a global emergency (25 June 2022). Link:

<https://www.washingtonpost.com/health/2022/06/25/monkeypox-who-global-emergency/>